



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/506,660	09/03/2004	Quanzhong Gao	9896-000051/NP	4776
27572 7590 10/18/2007 HARNES, DICKEY & PIERCE, P.L.C. P.O. BOX 828 BLOOMFIELD HILLS, MI 48303			EXAMINER FOX, BRYAN J	
			ART UNIT 2617	PAPER NUMBER
			MAIL DATE 10/18/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/506,660	Applicant(s) GAO ET AL.	
	Examiner Bryan J. Fox	Art Unit 2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 July 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1, 2 and 5-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Balachandran et al (WO 01/30107 A2) in view of Chuah (US 20030076803A1).

Regarding claim 1, Balachandran et al disclose the MS sends periodic measurement reports to the SRNC regarding the radio conditions (see page 5, lines 3-12), which reads on the claimed, "according to the measurement control information provided by a corresponding SRNC of a Node B to which a UE currently belongs, measuring signals of co-frequency neighbor cells by the UE to obtain a measuring result; reporting the measuring result to said SRNC by the UE." At some point, the signal strength gets weak enough to initiate a handover to another cell (see page 5, lines 3-12), which reads on the claimed, "making a handover decision according to said

measuring result by said SRNC, and determining whether to make a soft handover." A relocation required message is sent from the SRNC to the ESGSN and identifies the TRNC. The ESGSN sends a relocation request to the identified TRNC and the TRNC performs a radio resource reservation procedure (see page 5, lines 3-12), which reads on the claimed, "if not then continuing to make handover decision; if yes, then determining whether said SRNC has right to dispatch common resources of a target Node B to which said the current UE is to handover; if yes, applying for required common resources to a specific functional entity that controls said common resources of said target Node B by said SRNC." The TRNC determines the availability of radio resources required to serve the MS in the TRNC, and reserves the resources if they are available (see page 5, lines 3-12). After a relocation command message is sent, the EXGN starts bicast the PDUs to both the SRNC and the TRNC (see page 5, line 31 – page 6, line 6), which reads on the claimed, "if not then initiating a soft handover between RNCs, and ending; and according to status of current use of common resources of said target Node B, responding whether said common resources are available by said specific functional entity, if yes, then establishing a...connection between said SRNC and said target Node B by said SRNC, and initiating a soft handover within RNC, otherwise initiating a soft handover between RNCs."

Balachandran et al fail to expressly disclose establishing a direct connection between the SRNC and the Node B.

In a similar field of endeavor, Chuah discloses the use of a direct connection between a SRNC and a Node B (see paragraph 19).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Balachandran et al with Chuah to include the above direct connection between the SRNC and Node B in order to reduce the differential delays between signals received by the base stations as suggested by Chuah (see paragraph 11).

Regarding claim 2, the combination of Balachandran et al and Chuah discloses the MS sends periodic measurement reports to the SRNC regarding the radio conditions and at some point, the signal strength gets weak enough to initiate a handover to another cell (see Balachandran et al page 5, lines 3-12), which reads on the claimed, "the measuring result in step b is a signal strength measuring result."

Regarding claim 5, Balachandran et al fails to disclose the specific functional entity is a logical functional entity within said target Node B.

In a similar field of endeavor, Chuah discloses the Nodebs decide how to route the call setup requests and reflect the priority of each RNC (see paragraphs 19-22), which reads on the claimed, "the specific functional entity is a logical functional entity within said target Node B."

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Balachandran et al with Chuah to include the above use of the Nodebs decisions in order to aid in load control as suggested by Chuah (see paragraph 11).

Regarding claim 6, the combination of Balachandran et al and Chuah discloses the relocation required message is sent from the SRNC to the ESGSN and identifies the

TRNC. The ESGSN sends a relocation request to the identified TRNC and the TRNC performs a radio resource reservation procedure (see Balachandran et al page 5, lines 3-12), which reads on the claimed, "the specific functional entity is a logical functional entity in a network server."

Regarding claim 7, the combination of Balachandran et al and Chuah discloses the TRNC determines the availability of radio resources required to serve the MS in the TRNC, and reserves the resources if they are available (see Balachandran et al page 5, lines 3-12), which reads on the claimed, "said status of current use of common resources of said target Node B in step d is obtained according to whether there are common resources in target Node B."

Regarding claim 8, the combination of Balachandran et al and Chuah discloses the MS leaves its serving cell and enters the target cell. The ESGSN stops bi-casting the PDUs and sends them only to the TRNC (see page 6, lines 7-16), which reads on the claimed, "setting the currently corresponding RNC of said target Node B as a DRNC, establishing a link between said SRNC and said DRNC, and making a soft handover between said SRNC and said DRNC."

Regarding claim 9, the combination of Balachandran et al and Chuah discloses the ESGSN then sends a Deallocate Resource message to the SRNC which makes the radio resources previously used by the MS available to other users (see page 6, lines 17-21), which reads on the claimed, "retrieving the corresponding common resources by said target Node B, when a soft handover has been completed and said direct connection between SRNC and target Node B needs to be disconnected."

Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Balachandran et al in view of Chuah as applied to claim 1 above, and further in view of what was old and well-known in the art (see MPEP 2144.03).

Regarding claim 3, the combination of Balachandran et al and Chuah fails to expressly disclose the measuring result in step b is a bit error rate measuring result.

The Examiner takes Official Notice that it was old and well known to one of ordinary skill in the art at the time of invention to measure a bit error rate of the channel being tested.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify the combination of Balachandran et al and Chuah to include the measuring result in step b is a bit error rate measuring result, as taught by well known prior art, to determine interference based on how well the mobile user is receiving data from the neighboring channels.

Regarding claim 4, the combination of Balachandran et al and Chuah fails to expressly disclose the measuring result in step b is a signal-interference ratio measuring result.

The Examiner takes Official Notice that it was old and well known to one of ordinary skill in the art at the time of invention to measure signal-interference ratio of the channel being tested.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify the combination of Balachandran et al and Chuah to include

the measuring result in step b is a signal-interference ratio measuring result, as taught by well known prior art, to enable the SRNC to determine which neighboring channel would be best suited for the mobile device based on interference levels.

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Balachandran et al in view of Chuah as applied to claim 8 above, and further in view of Blair et al (US 7,110,764).

Regarding claim 10, the combination of Balachandran et al and Chuah fails to disclose the SRNC and the DRNC locate in different core networks.

In a similar field of endeavor, Blair et al disclose handoff between two RANs that are connected to two different core networks (see column 7, lines 59-67).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the combination of Balachandran et al and Chuah with Blair et al to include the above use of different core networks in order to provide maximum flexibility in roaming to the users.

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Balachandran et al in view of Chuah as applied to claim 1 above, and further in view of Rune et al (US 2002/0025815).

Regarding claim 11, the combination of Balachandran et al and Chuah discloses the TRNC sends a Relocation Request Acknowledge message back to the ESN where the Relocation Request Acknowledge message is enhanced to carry

information about the target cell resources that were reserved (see page 5, lines 3-36), which reads on the claimed, "the Node B sending its dedicate resources information to a controlling RNC." The combination of Balachandran et al and Chuah fails to disclose broadcasting its common resources information to non-controlling RNCs.

In a similar field of endeavor, Rune et al disclose sending to a SRNC resource information including particular common channels to be used in a connection (see paragraphs 58-60), which reads on the claimed, "broadcasting its common resources information to non-controlling RNCs," wherein the SRNC is a non-controlling RNC.

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the combination of Balachandran et al and Chuah with Rune et al to include the above sending of resource information in order to allow more efficient use of the radio spectrum when switching from dedicated channels to common channels in a radio access network as suggested by Rune et al (see paragraph 73).

Response to Arguments

Applicant's arguments filed July 27, 2007 have been fully considered but they are not persuasive.

The Applicant argues Balachandran et al fails to disclose determining whether said SRNC has right to dispatch common resources of a target Node B to which said the current UE is to handover; if yes, applying for required common resources to a specific functional entity that controls said common resources of said target Node B by said SRNC, and according to status of current use of common resources of said target Node B, responding whether said common resources are available by said specific

Art Unit: 2617

functional entity, if yes, then establishing a direct connection between said SRNC and said target Node B by said SRNC, and initiating a soft handover within RNC. The Examiner respectfully disagrees. The process of sending a request for resources that can be rejected if resources are not available (see rejection of claim 1 above) reads on the broadest reasonable interpretation in light of the specification of the claimed limitations.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., the TRNC does not participate in the handover procedure) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

The Applicant argues Balachandran et al fails to disclose establishing a direct connection between said SRNC and said target Node B by said SRNC, and initiating a soft handover within RNC. The Examiner relied on Chuah to disclose this limitation (see rejection of claim 1 above).

The Applicant makes similar arguments with respect to the remainder of the claims, however for the same reasons outlined above, the Examiner respectfully disagrees.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

Art Unit: 2617

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bryan J. Fox whose telephone number is (571) 272-7908. The examiner can normally be reached on Monday through Friday 9am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles N. Appiah can be reached on (571) 272-7904. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2617

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Bryan Fox
October 15, 2007


CHARLES N. APPIAH
SUPERVISORY PATENT EXAMINER